USSN: 09/817,387
Response to Office Action dated October 10, 2006
Atty Docket: 101195-24
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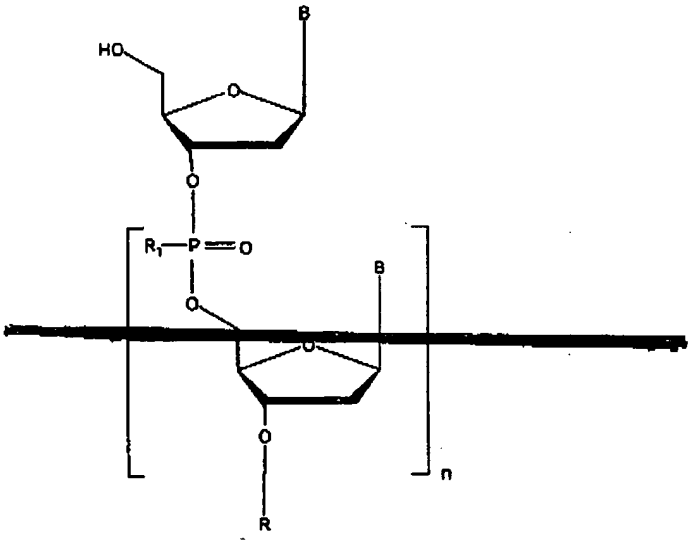
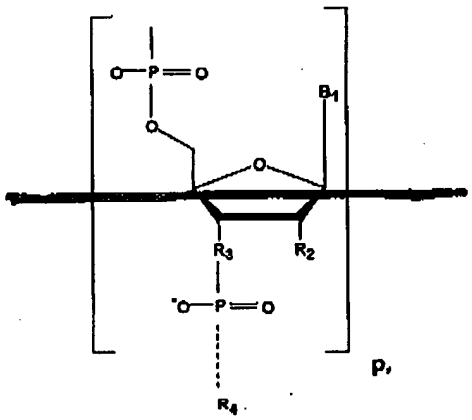
II. **CLAIMS:**

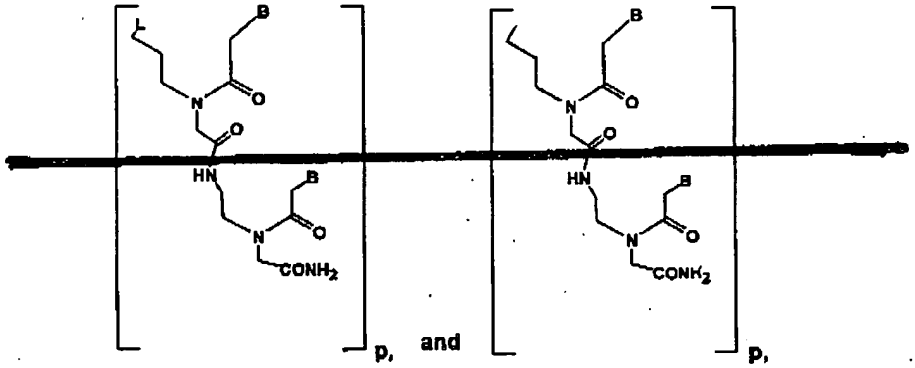
1. (Currently Amended) Chimeric oligonucleotides of the ~~general~~ formula I, II or III



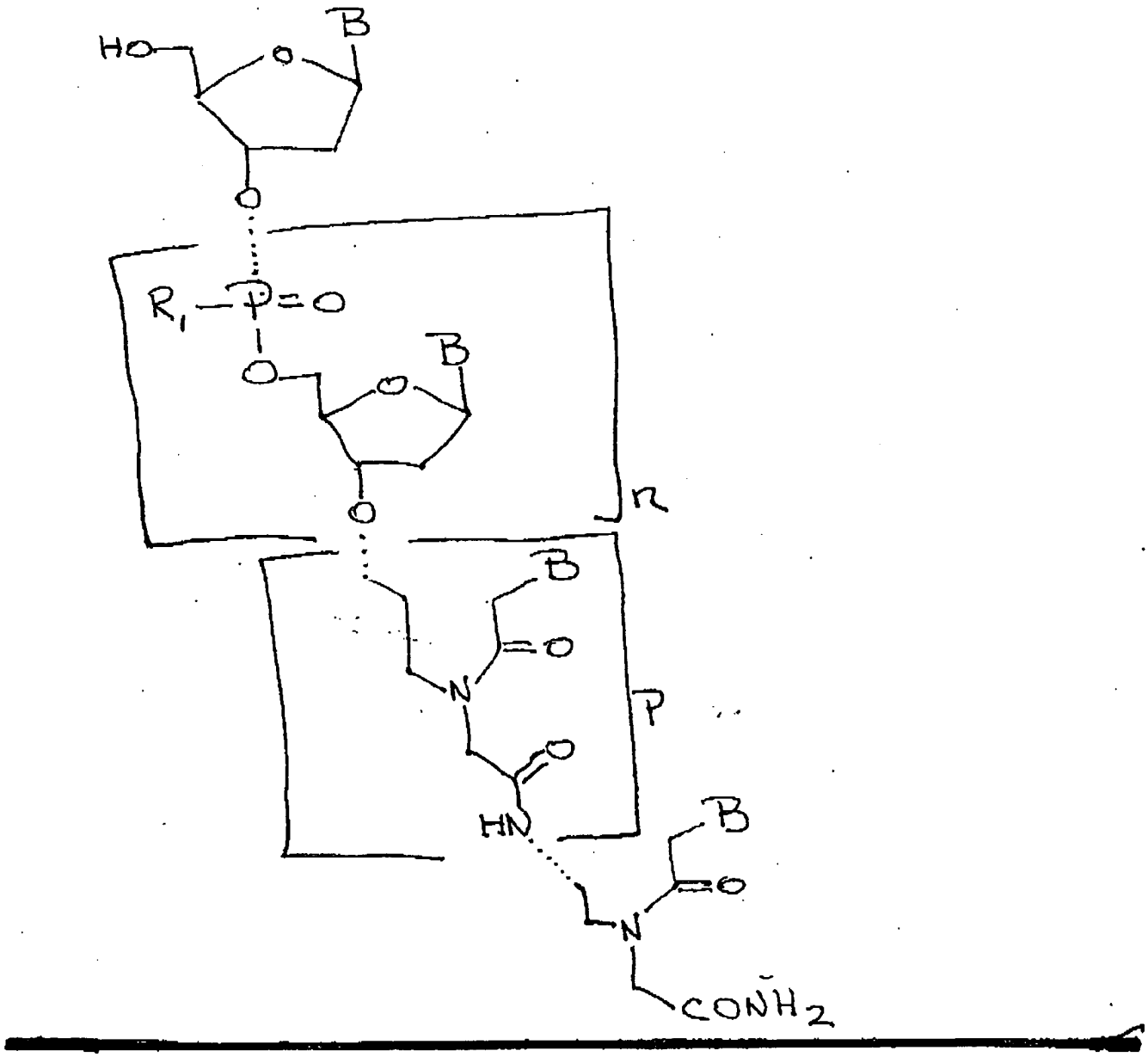
~~wherein R is selected from the group consisting of~~



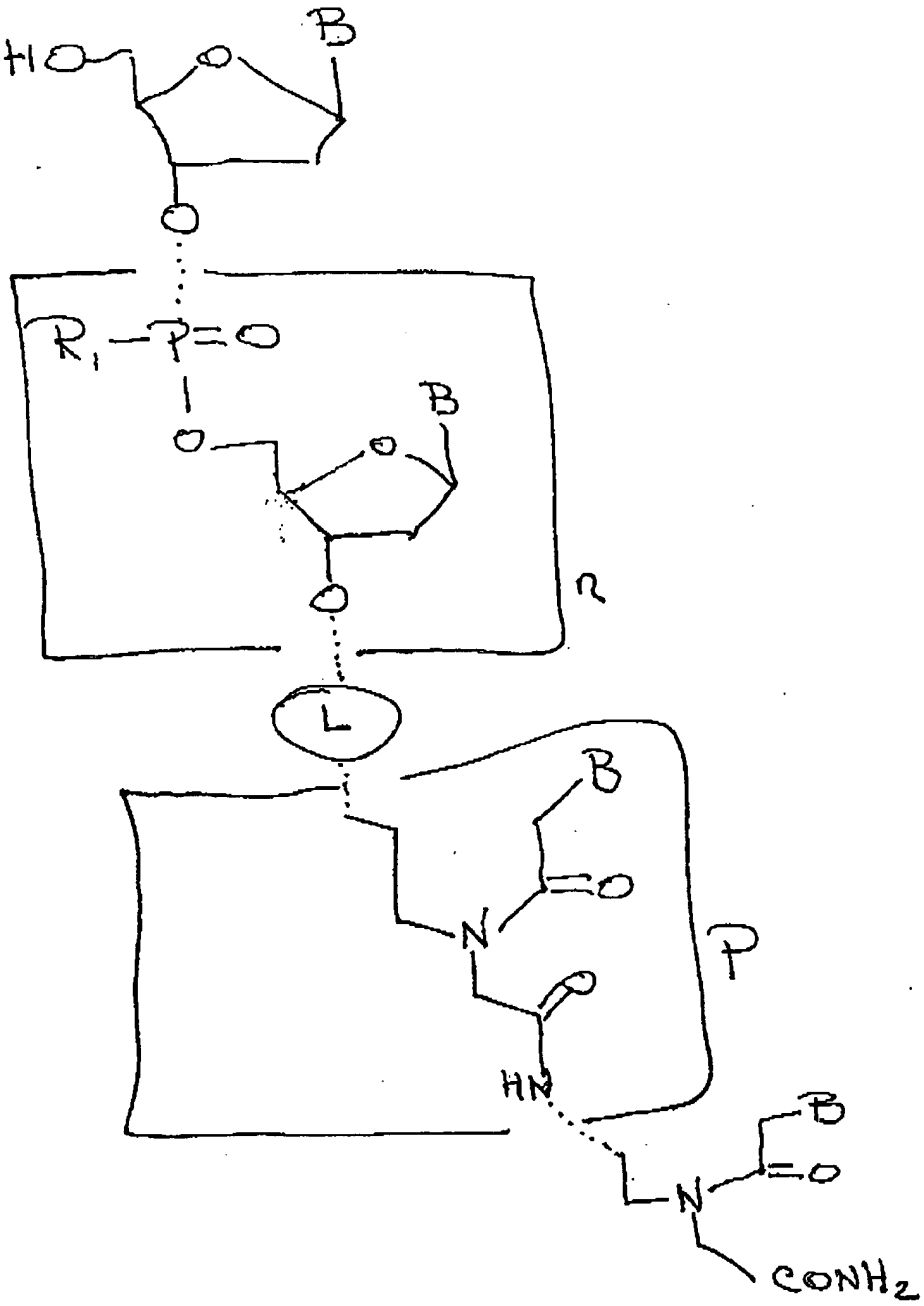
p,



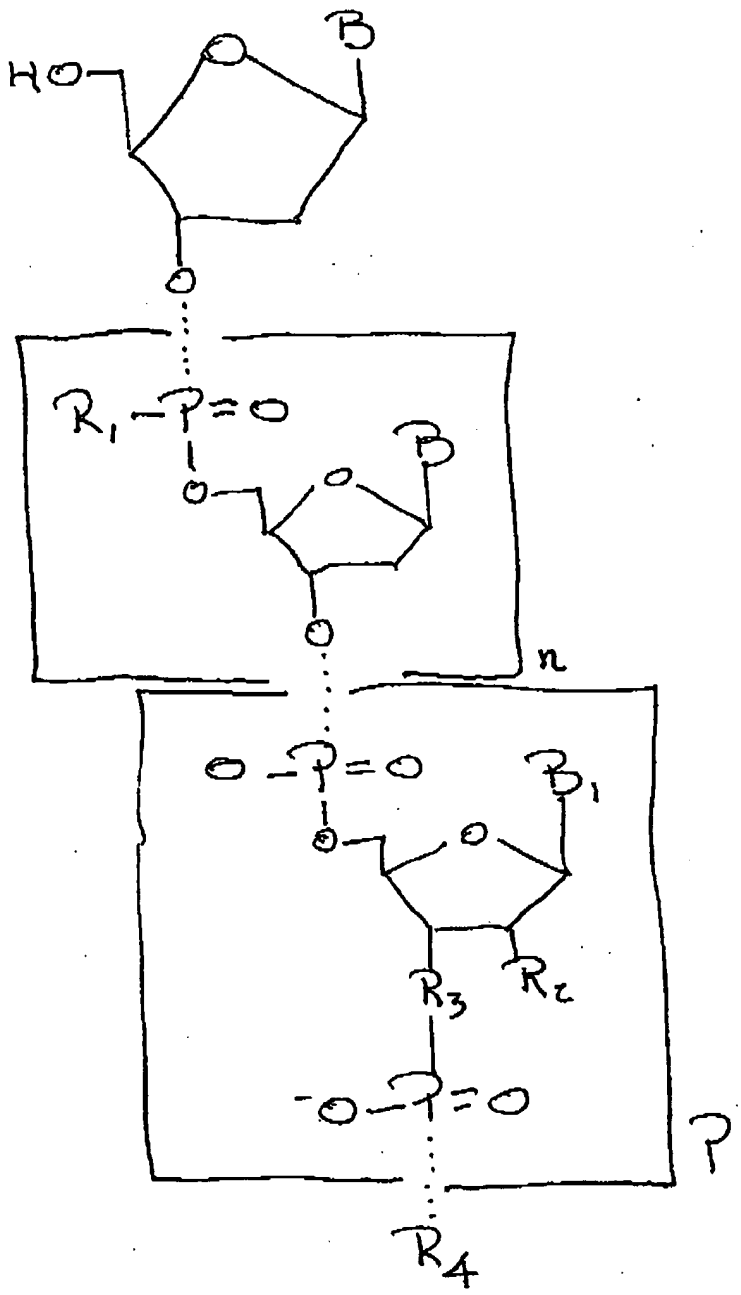
p, and p,



I



II



III

and wherein

n is at least 10 and not more than 20,

R_1 is selected from the group consisting of S^-, CH_3, and O^-, where at least one R1 is S^-,

B is selected from the group consisting of thymine, cytosine, adenine, and guanine,

p is at least 3 and not more than 17,

B_1 is selected from the group consisting of thymine, cytosine, adenine, guanine, 5-propyluracil, and 5-propylcytosine,

R_2 is selected from the group consisting of H, F, NH_2, O-alkyl ($C_1 - C_5$), O-allyl, and O-methoxyethoxy,

R_3 is selected from the group consisting of NH and O, wherein if R_3 is NH, R_2 must not be selected from the group consisting of NH_2, O-alkyl ($C_1 - C_5$), O-allyl, and O-methoxyethoxy,

R_4 is selected from the group consisting of 2',3'-dideoxy-3'-fluoroguanosine, 2',3'-dideoxy-3'-azidoguanosine, 2',3'-dideoxy-3'-aminoguanosine, 2',3'-acyclovir, gancyclovir, 2'-deoxyadenosine, 2'-deoxyguanosine, 2'-deoxycytidine, and 2'-deoxythymidine,

L is selected from the group consisting of [=]-(PO_2)-OCH_2-COH-CH_2-NH- and -(PO_2)-OCH_2-CH(CH_2COOH)-$(CH_2)_4$NH-

and wherein each chimeric oligonucleotide inhibits telomerase activity.

2. (Currently Amended) The oligonucleotides according to claim 1, ~~wherein R is~~ of formula I or II.

3-4. Cancelled

5. (Original) The oligonucleotides according to claim 1, wherein R_1 to R_4 and B and B_1 vary from a nucleotide unit to another nucleotide unit.

6. (Previously Presented) The oligonucleotides according to claim 1, wherein the oligonucleotides having a nucleotide sequence is selected from the group consisting of

5'-TCAGATTAGTACTCGTCAGAGTTAGGGTTAG-3' (SEQ ID No. 1)

5'-TCAGATTAGGACTGCTCAGAGTTAG-3' (SEQ ID No. 2)

5'-TCAGATTAGTACTCGTCAGACAGTTAGGGTTAG-3' (SEQ ID No. 3)

5'-TCAGATTAGTACTCGTCAGAGTTAGAGTTAG-3' (SEQ ID No. 4)

5'-TCAGATTAGGACTGCTCAGAGUUAG-3' (SEQ ID No. 5)

5'-TCAGATTAGGACTGCTCAGAUAGUUAG3' (SEQ ID No. 6)

5'-TCAGATTAGGACTGCTCAGAGUUAGGGTTAGACAA-3' (SEQ ID No.7)

5'-TCAGATTAGGACTGCGTTAGGGTTAGACAA-3' (SEQ ID No. 8)

5'-TCAGATTAGTACTCGTCAGA-O(PO_2)OCH_2CH(CH_2COOH-(CH_2))$_4$-NH-TAGGGTTAGACAA-3' (SEQ ID No. 9)

5'-TCAGATTAGTACTCGTCAGAGTTAGGGTTA-azidodeoxyguanosine-3' (SEQ ID No. 10)

5′-AATCCTCCCCCAGTTCACCC- GTTAGGGT-3′ (SEQ ID No. 11)

5′-TCTCCCAGCGTGCGCCAT- GUUAGGGUUAG-3′ (SEQ ID No. 12)

5′-ATGTATGCTGTGGCT- n(L) -GTTAGG-3′ (SEQ ID No. 13)

5′- GTACTGCTCAGA-GTTAGGGTTAG-3′ (SEQ ID No. 14)

5′- GTACTGCTCAGA-GTTAGGGT-3′ (SEQ ID No. 15)

5′- GTACTGCTCAGA-GUUAGGGUUAG-3′ (SEQ ID No. 16)

5′- GTACTGCTCAGA-n(L)-GTTAGG-3′ (SEQ ID No. 17)

5′-GGCCAGCAGCTG- GUUAGGGUUAG-3′ (SEQ ID No. 18)

5′- TGCTCAGA-GUUAGGGUUAG-3′ (SEQ ID No. 19)

5′- TGCTCAGA-n(L)-GTTAGG-3′ (SEQ ID No. 20)

5′- TCAGACATATACTGCTCAGA-n(L)-TAGGGTTAGACAA-3′ (SEQ ID No. 21)

5'- ACT GCT CAG A-GTT AG-3' (SEQ ID No. 22)

5'- ACT GCT CAG A-GUU AGG GUU AG-3' (SEQ ID No. 23)

5'- ATA CTG CTC AGA-linker-GTT AGG GTT AG-3' (SEQ ID No. 24)

5'- TTA GTA CTG CTC AGA-GTT AGG GTT AG-3' (SEQ ID No. 25)

5'- TCA GAT TAG TAC TGC TCA GA-GTT AG-3' (SEQ ID No. 26)

5'- TCA GAT TAG TAC TGC TCA GA-GTT AG-3' (SEQ ID No. 27) and

5'-ACT GCT CAG A-GTT AGGGTTAG-3' (SEQ ID No. 28).

7. (Previously presented) A method of inhibiting telomerase activity, comprising the administering of chimeric oligonucleotides of claim 1 to a human tumor cell line.

8. (Previously Presented) A method of inhibiting telomerase activity in tumor cells in a mammal comprising the administering of chimeric oligonucleotides of claim 1 in a flank region, wherein the oligonucleotides have a nucleotide sequence selected from the group consisting of:

5'-TCAGATTAGTACTCGTCAGAGTTAGGGTTAG-3' (SEQ ID No. 1)

5'-TCAGATTAGGACTGCTCAGAGTTAG-3' (SEQ ID No. 2)

5'-TCAGATTAGTACTCGTCAGACAGTTAGGGTTAG-3' (SEQ ID No. 3)

5'-TCAGATTAGTACTCGTCAGAGTTAGAGTTAG-3' (SEQ ID No. 4)

5'-TCAGATTAGGACTGCTCAGAGUUAG-3' (SEQ ID No. 5)

5'-TCAGATTAGGACTGCTCAGAUAGUUAG3' (SEQ ID No. 6)

5'-TCAGATTAGGACTGCTCAGAGUUAGGGTTAGACAA-3' (SEQ ID No.7)

5'-TCAGATTAGGACTGCGTTAGGGTTAGACAA-3' (SEQ ID No. 8)

5'-TCAGATTAGTACTCGTCAGA-O(PO_2)OCH_2CH(CH_2COOH-(CH_2))$_4$-NH-TAGGGTTAGACAA-3' (SEQ ID No. 9)

5'-TCAGATTAGTACTCGTCAGAGTTAGGGTTA-azidodeoxyguanosine-3' (SEQ ID No. 10)

5'-AATCCTCCCCCAGTTCACCC- GTTAGGGT-3' (SEQ ID No. 11)

5'-TCTCCCAGCGTGCGCCAT- GUUAGGGUUAG-3' (SEQ ID No. 12)

5'-ATGTATGCTGTGGCT- n(L) -GTTAGG-3' (SEQ ID No. 13)

5'- GTACTGCTCAGA-GTTAGGGTTAG-3' (SEQ ID No. 14)

5'- GTACTGCTCAGA-GTTAGGGT-3' (SEQ ID No. 15)

5′- GTACTGCTCAGA-GUUAGGGUUAG-3′ (SEQ ID No. 16)

5′- GTACTGCTCAGA-n(L)-GTTAGG-3′ (SEQ ID No. 17)

5′-GGCCAGCAGCTG- GUUAGGGUUAG-3′ (SEQ ID No. 18)

5′- TGCTCAGA-GUUAGGGUUAG-3′ (SEQ ID No. 19)

5′- TGCTCAGA-n(L)-GTTAGG-3′ (SEQ ID No. 20)

5′- TCAGACATATACTGCTCAGA-n(L)-TAGGGTTAGACAA-3′ (SEQ ID No. 21)

5'- ACT GCT CAG A-GTT AG-3' (SEQ ID No. 22)

5'- ACT GCT CAG A-GUU AGG GUU AG-3' (SEQ ID No. 23)

5'- ATA CTG CTC AGA-linker-GTT AGG GTT AG-3' (SEQ ID No. 24)

5'- TTA GTA CTG CTC AGA-GTT AGG GTT AG-3' (SEQ ID No. 25)

5'- TCA GAT TAG TAC TGC TCA GA-GTT AG-3' (SEQ ID No. 26)

5'- TCA GAT TAG TAC TGC TCA GA-GTT AG-3' (SEQ ID No. 27) and

5'-ACT GCT CAG A-GTT AGGGTTAG-3' (SEQ ID No. 28).

9. (Currently Amended) The oligonucleotides of claim 1, ~~wherein said oligonucleotide binds~~ bound to telomerase thereby inhibiting telomerase catalytic activity.

10. (Currently Amended) The bound oligonucleotides of claim 9 wherein said binding to telomerase occurs either inside a eukaryotic cell or in the absence of intact eukaryotic cells.

11. (Currently Amended) The bound oligonucleotides of claim 10, wherein said binding to telomerase occurs inside a tumor cell.

12. (Previously Presented) The method of claim 8, wherein the administering is by an intravenous route.

13. Cancelled

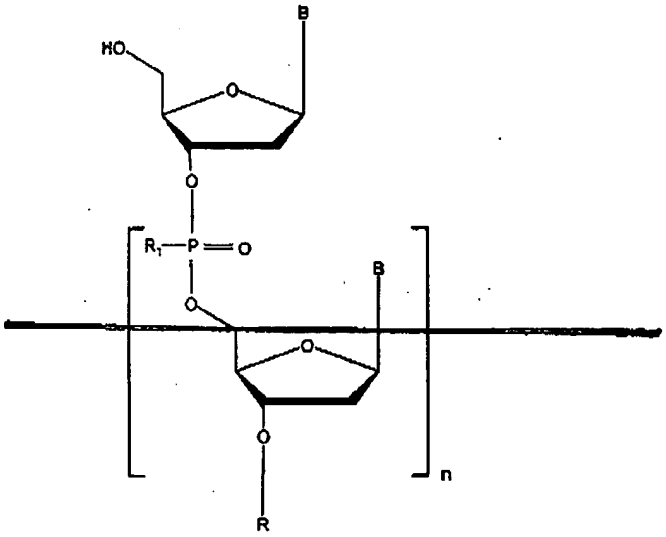
14. (Previously Presented) The method of claim 13, wherein the tumor cells are mammalian tumor cells.

15. (Previously Presented) The method of claim 13, wherein the tumor cells are human tumor cells.

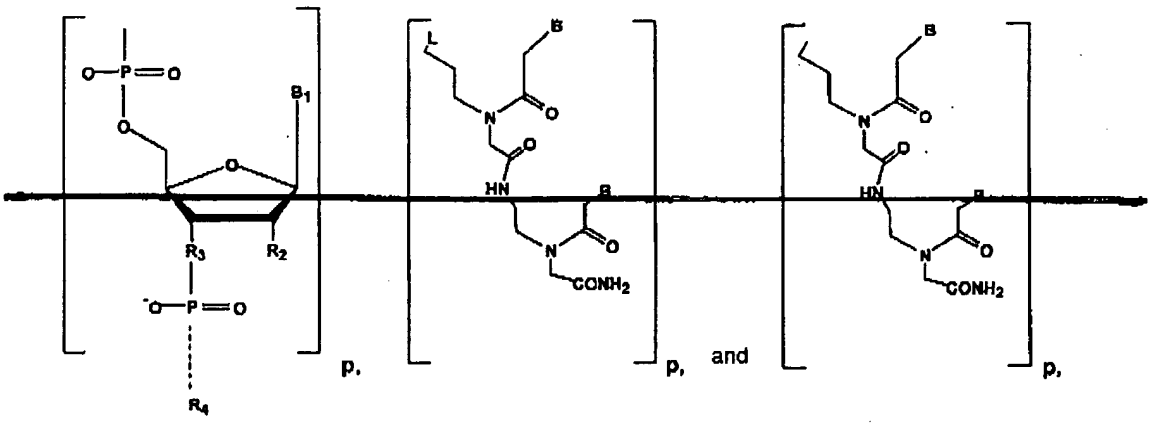
16. (Previously Presented) The method of claim 7, wherein the oligonucleotide has the structure described in SEQ ID NO: 1-28.

17. (Currently Amended) The bound oligonucleotide of claim 9 wherein the ~~bind~~ oligonucleotide is bound ~~to telomerase comprises~~ to the telomerase RNA component.

18. (Currently Amended) A method of inhibiting telomerase activity *in vitro* comprising ~~the administering of~~ contacting the chimeric oligonucleotides of claim 1 with telomerase under conditions permissive of oligonucleotide-telomerase binding. ~~from having the general formula I~~:



~~wherein R is selected from the group consisting of~~



~~and wherein~~

~~n is at least 10 and not more than 20;~~

~~R_1 is selected from the group consisting of S^-, CH_3, and O^-;~~

~~B is selected from the group consisting of thymine, cytosine, adenine, and guanine;~~

~~p is at least 3 and not more than 17;~~

~~B_1 is selected from the group consisting of thymine, cytosine, adenine, guanine, 5-propyluracil, and 5-propylcytosine;~~

~~R_2 is selected from the group consisting of H, F, NH_2, O-alkyl (C_1 – C_5), O-allyl, and O-methoxyethoxy;~~

~~R_3 is selected from the group consisting of NH and O, wherein if R_3 is NH, R_2 must not be selected from the group consisting of NH_2, O-alkyl (C_1 – C_5), O-allyl, and O-methoxyethoxy;~~

~~R_4 is selected from the group consisting of 2',3'-dideoxy-3'-fluoroguanosine, 2',3'-dideoxy-3'-azidoguanosine, 2',3'-dideoxy-3'-aminoguanosine, 2',3'-acyclovir, ganciclovir, 2'-deoxyadenosine, 2'-deoxyguanosine, 2'-deoxycytidine, and 2'-deoxythymidine;~~

~~L is selected from the group consisting of $-(PO_2)-OCH_2-COH-CH_2-NH-$ and $-(PO_2)-OCH_2-CH(CH_2COOH)-(CH_2)_4NH-$~~

~~and wherein each chimeric oligonucleotide inhibits telomerase activity.~~

19. (New) An oligonucleotide according to claim 1 bound non-specifically to a protein site.

20. (New) The bound oligonucleotide of claim 19 where the protein site is the primer binding site.

21. (New) The oligonucleotides of claim complexed with a cationic liposome.

22. (New) The oligonucleotides according to claim 1, of formula III.